The Nutrition Rehabilitation Village

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from The Child Care and Adoption Society - Zambia

As the reader looks through this report, the specific Makeni Nutrition Rehabilitation Village on the one hand, and the general guidelines for setting up a similar village anywhere else, on the other hand, should be treated as two separate though related concepts.

The Makeni Nutrition Rehabilitation Village is described not as a model or ideal upon which others might be based, but rather in order to detail some of the initial experiences gathered there. Indeed any Nutrition Rehabilitation Village that might be set up elsewhere is likely to differ in several fundamental respects. For one thing, the Makeni village caters for a relatively urban population. Its physical structure bears very little resemblance to that of a rural village. It contains running water, showers and flush toilets in each house. The buildings are constructed of concrete breeze blocks, tin roofs and ceilings. These factors, for a start, make it irrelevant as a model for a Nutrition Rehabilitation Village in most of the developing world.

But still, there are many other factors at Makeni, structural as well as functional, which are a source of ideas for use in a wide variety of similar schemes. The appendices of this report deal with some general principles to consider when setting up a Nutrition Rehabilitation Village, and how these principles have been applied in the specific instance of the establishment of the Makeni village.

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OFFICE OF THE PRINCIPAL. RURAL EXTENSION TRAINING CENTRE
5 - DEC 1973
T. KALLUPATTI

The Nutrition Rehabilitation Village

by

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The National Food and Nutrition Commission

Lusaka 1972

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Buildings & Staff

In Lusaka the need has been felt for some time by health and nutrition experts for a Nutrition Rehabilitation Centre, geared to the needs and problems of parents whose children constantly or intermittently suffer from malnutrition.

An earlier attempt in 1968 to establish such a centre in the grounds of the Central Hospital had failed as it was too much an extension of the sick children's wards. Mothers and their convalescent children spent only a few hours each day at the centre away from the hospital wards. The only teaching which could be done was the preparation and eating of the midday meal in surroundings where there were many disturbances.

Thus, it was felt that a more suitable place should be found, outside the city centre, where mothers and their children under five years of age could be admitted and spend some weeks learning to improve the care of their children with better methods for cooking, feeding and housekeeping, better adapted to city life.

Late in 1971 the Child Care and Adoption Society of Zambia took up the challenge and began building a Nutrition Rehabilitation Village adjacent to the Makeni Ecumenical Centre for Agriculture and Home Craft training.

The Nutrition Rehabilitation Village is a separate unit and is built in a secluded corner of the Makeni Centre.

Although the entire cost of the buildings (amounting to K37,000 or about $53,000, including labour) has been borne by the Child Care and Adoption Society, there is close cooperation between the activities of both centres. The Child Care and Adoption Society has made itself responsible for the running costs and staffing of the nutrition village.

The Nutrition Rehabilitation Village consists of two staff flats, an office and food store, a communal kitchen - lecture room and seven individual houses, one for each mother with one or two children.

The houses are built according to the City Council housing requirements, and therefore include electricity and piped water. Each house consists of one room, a separate shower room/toilet and a covered verandah.

Each house is equipped with a bed, one or two cots, a table, two chairs and a cupboard for food and utensils. The toilet has a bucket for cleaning purposes, a bowl for bathing the small children and a chamber for toddlers' use.

There is a communal open fireplace built to burn all waste matter and for the quick boiling of water on a wood fire.

The cooking of food is done on small individual charcoal burners, as is common practice all over Zambia.

There is plenty of open space around the houses on which vegetables, fruit trees and shrubs are planted.

There is a chicken house with ten chickens which provide eggs for daily use at the centre. The surplus eggs and vegetables are sold.

The centre is fortunate in having a good water supply from a deep borehole pumped up by an electric pump.

The buildings were completed at the beginning of May 1972 and the centre was officially opened by H.E. The President, Dr. Kenneth Kaunda at the end of May.

Miss Joan Koppert, formerly of the Maternal and Child Health Unit of the Department of Health of Zambia, and a coopted member of the Executive Committee of the Child Care and Adoption Society returned to Zambia to give the centre a start.

Staff at the Centre

Two housemothers live at the centre. They both have had primary school and home craft education. They do full time duty at the centre and are responsible for its daily running.

They supervise the daily activities of the mothers. One is responsible for the food and the other is responsible for the children and the houses. They are off duty either in the afternoon or evening with one day off per week and three extra days at the end of each group intake.

A medical dresser employed at the clinic of the Ecumenical Centre can be called upon if there should be sudden illness. He gives health lectures twice a week in the evening. His wife is home craft trained and assists at both the nutrition village and the home craft centre. This family is also housed at the nutrition village.

At present there is a part time SRN who visits the village daily and has overall responsibility for the running, administration and home visiting of the families both before and after admission.

The full time social worker employed by the Society spends two days per week for home visiting and contact with the Department of Social Welfare.

Activities

A programme for daily activities is worked out as follows:

06.30	lighting outside fireplace, cooking porridge, weighing children, dressing children.
07.00	children's breakfast
07.30	mothers' breakfast
08.00-09.00	cleaning houses, laundering
09.00	children's milk drink
09.00-11.00	gardening, collecting vegetables, shopping at Nutrition Group Depot. Discussing food values and prices.
11.00-12.00	preparing midday meal
12.00-12.30	childrens meal, children to rest
12.30-14.00	mothers' meal - cleaning up
14.00-16.00	lecture or home craft training
15.00	children's fruit
16.00-17.00	watering gardens, care of livestock
17.00-18.00	bathing children, preparing evening meal
18.30	children to bed
19.00	mothers' meal
20.00-21.30	evening discussions, mothers to bed

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Subjects of Teaching and Discussions

FOOD by housemothers and home economist

values
buying - prices and household budgeting
growing
storing
measuring
cooking

HEALTH by medical assistant

prevention of malnutrition
prevention of infection
prevention of accidents
treatment of minor accidents and illness at home

GARDENING by agriculturalist of Ecumenical Centre

elementary preparations and
maintenance of home gardens

HOME CRAFT by home craft teacher (wife of medical assistant)

mending
knitting
sewing

This programme has been used with several groups and apart from small adjustments according to the group, it is found to work well without being too rigid.

Plenty of time is given to the mothers to allow individual attention to the children. In the first group, three out of four children aged from 1 - $1\frac{1}{2}$ years began to walk, which pleased the mothers very much.

Playing with suitable toys is encouraged - not necessarily shop toys, but preferably items the children can do something with. We find that little boys love drumming on empty tins, providing they make a good noise; boxes resembling motor cars are also popular. The girls prefer a doll or soft animal toy. The younger ones like anything that glitters or rattles.

While the children play, the mothers get on with their knitting or sewing.

Often during the first week, the 1 - 1½ year old clings very much to mother's back, even during her household chores, but gradually we see the children get together of their own accord and the mother feels happy when they play together in a sheltered safe place.

Feeding and eating together is enjoyed more than eating by themselves. We encourage the mothers to let the children feed themselves with a spoon. If, however, the slightly older children prefer to eat with their fingers, we do not discourage this, provided the mother sees to it that they eat all their relish. Most children, we find, prefer the mixed feeding. We allow plenty of time for the slow eaters and mothers are encouraged to see that everything that has been measured and cooked is eaten.

Diet

We found that the originally recommended diet of 1300 calories with 38 grammes protein for the 1-3 year olds, and 1500 calories with 40.44 grammes protein for the 3-5 year olds is too much bulk for children who have suffered from malnutrition and deprivation.

We have had very excellent results with under weight children with a diet of 800-850 calories with 40-42 grammes protein for the 1-3 year olds and 1000 calories with 42-45 grammes protein for the 3-5 year olds.

A daily menu looks as follows:

		Calories	Protein gm
Breakfast	25 gm mealie meal	90	2
	10 gm kapenta	30	6
	or ½ egg		
	or 20 gm groundnuts		
09.00	150 cc milk		
midday meal	50 gm mealie meal	180	4
	30 gm beans (dry)	90	6
	10 gm kapenta	30	6
	20 gm vegetables	15	1
15.00	200 gm fruit (tomato juice, banana, pawpaw)	25	1
supper	25 gm rice	90	2
	20 gm groundnuts	120	6
	or ½ egg		
	10 gm sugar	30	-
	30 gm dry skim milk per day	105	10
	Total	805	44

The Children

Here are the weight results of some of the children who have had a three week stay at the centre. It is only a small number and it is too early to draw conclusions, but it is significant how various social backgrounds have played an important role.

Name	Age	Reason for Admission	Weight on Admission	After 1 week	2nd wk.	3rd wk
Ben	5 yrs	kwashiorkor	9.0 Kg	9.8	11.0	11.5
Chali (bro. to B)	1 3/12	normal breastfed	8.9 Kg	9.0	9.1	9.2
Mwale	6/12	malnutrition	7.1 Kg	7.2	7.4	7.5
Musonda	6/12	malnutrition	8.1 Kg	8.3	8.8	9.0
Kay	yrs	marasmus	10.5 Kg	10.3	11.6	12.5
Frances (sis to K)	5/12	normal bottle fed	4.6 Kg	5.0	5.2	5.6
Nelly	1 4/12	recovering severe diarr.	7.2 Kg	7.5	8.0	8.6
Rita (sis. to N)	3 yrs	normal	11.7 Kg	11.9	12.3	12.6
Ivan	1 4/12	sev. anaemia malnutrition	7.3 Kg	6.7	6.9	7.5
Noi	2 3/12	underweight	9.7 Kg	9.0	9.2	
Sara (sis. to N)	9/12	underweight	5.5 Kg	5.4	5.1	

Here we quote four of the children's histories and backgrounds.

Ben is the third child in a family of four children. The other three were in good condition whilst Ben has suffered several times from kwashiorkor. He was badly dressed and the mother showed little interest in him. The husband has a regular job in the lower income group. He has two wives living in the same house. His mother appeared convinced that Ben had some illness in his stomach which caused the kwashiorkor. We could not find out why she was less interested in Ben than in the other children.

Ben was in very bad condition on admission, not playing or laughing. He had a good appetite and was eating up to 1700 calories each day. He gained weight from the start. His mother then became more interested in him. He gained 2.5 Kg during the 20 day stay at the centre. When we visited the family at home after four weeks, he was playing outside and had obviously put on more weight.

Max was the only child of an unmarried mother who had very little self-confidence. The child had been spoilt by the grandmother and not given the right kind of food. He was extremely miserable. He arrived having had diarrhoea for one week, and had a poor appetite. He was put on a 700 calorie diet with 30 gm of protein, which was increased after the first week to 850 calories with 37 gm of protein as his appetite had much improved. He remained miserable until the last week when he began to play and laugh. The mother had gained a great deal of confidence and later revisited the centre.

Musonda was the only surviving child in a family where three had died previously, two during the first month of life and one at one year. The husband had a very low income as a part time gardener. The mother was bright and eager to learn, but was used to traditional village life. Musonda had a good appetite and gained weight steadily on an 850 calorie and 37 gm protein daily diet. He began to walk during the second week and cut his two molars. On a home visit a month later he was playing with other children and obviously still gaining weight.

His mother was managing on an income of K6.00 per month which allowed for mealie meal, beans and groundnuts only, as well as some vegetables from her own garden.

Noi was 2 kg underweight for his age, but he was very lively and intelligent. He was always involved with toys and playing, but he had little interest in food. He often left some of his 800 calorie daily diet. He also had large bulky stools. His 9 month old sister was still being breast fed. We found his mother to be $4\frac{1}{2}$ months pregnant on examination. It alarmed her very much that she had been breastfeeding the baby, who was not doing well, when she was pregnant. She insisted on going home and getting traditional medicine, as she was convinced the baby had been poisoned by the breast milk. We tried at first to persuade her to stay, but as she was torn between her loyalty to her husband and family and to us, we did not try to detain her but encouraged her to return to the under-fives clinic.

The follow-up visits are planned to continue until the children are five years old whilst contact is maintained between the social worker and the health visitor.

Costs

Running Costs per Year

The estimated running costs are as follows: -

Salaries - housemothers	K 1200
Electricity	350
Soap and fuel	200
Food	1000
Part time staff	500
Maintenance	150
Extras (transport)	300
Capital write off	1350
	K 5000

Our expenditure on food during the first three months has been a little less than estimated, with an average daily spending on food of thirteen ngwee (13 n.) per head. This, however, will not affect the overall cost to a great extent. K 1.00 per day per head is estimated if the centre is fully used.

As the Child Care and Adoption Society depends to a large extent on gifts and donations, we welcome a wide public interest in the running and maintenance of the centre.

Appendices

Appendix I

Setting up a Nutrition Rehabilitation Unit

Before planning and building a N.R.U., local conditions should be studied carefully. Centres should be based on local conditions and nothing should be undertaken that cannot be put into practice in the home of the person who has been taught at the N.R.U. The following points should therefore be taken into consideration: -

A The extent and cause of malnutrition in the district.

B Local sources of income on various levels.

C Type of housing.

D Local food supplies.

E Water supplies.

F Educational standard of parents and pattern of living.

G Local services available, e.g. health, maternal and child health, community development, social welfare.

A Malnutrition can find its origin in several causes. In rural areas essential food stuffs may not be available in sufficient quantities either throughout the year or seasonally.

On the other hand, there may be enough all the year round but the parents are unaware of what young children should be fed on. The daily routine of the mother may be such that the child gets only two meals a day, according to what is prepared for the rest of the family, or the child does not get its share of certain food owing to difficulty with eating e.g. meat, dried fish, coarse vegetables. Also, a child who has been fed well may, through a severe illness such as measles, lose its appetite and only eat the staple foods such as maize, rice, cassava or potatoes without sufficient protein, and thus may become malnourished.

In urban areas protein foods are usually too expensive for the lower income groups to buy sufficient for all the family, or there is ignorance of food values necessary for growth. Thus money is spent on less nourishing foods such as soft drinks instead of milk or sweets rather than fruit, fish, meat or vegetables.

In many countries there are now under-fives clinics and it is through these clinics that the extent of malnutrition has become known. With regular weighing and the use of the "Road to Health" charts, the child's weight gain can be watched and advised on. For methods of more extended surveys, read "Outline for a survey of feeding and nutritional status of children under three years of age and their mothers," by D.M. Blankhart, published in the December, 1971 issue of the Journal of Tropical Paediatrics and Environmental Child Health.

In children's wards in hospitals we usually find that those children suffering from malnutrition and kwashiorkor are those who had not attended the under fives clinic. It is these children and their mothers who qualify for admission to the nutrition rehabilitation village, so that the mothers can learn how to avoid a recurrence of these conditions.

Similarly, a mother attending the under fives clinic regularly or intermittently may not be able to bring into practice what is being taught at the health educa-

tion sessions at the clinic. Also, her home conditions may be such that she is unable to do what she is told at the clinic. Her husband and other family not being sufficiently involved or interested, she may not get enough support to bring about the necessary changes in the feeding and food growing habits at the home.

B It is important to know how the children are being fed and which foods are available throughout the year.

In rural areas there may be seasonal shortage of essential foods such as beans, groundnuts, legumes or fish, often through bad storage or inadequate preservation.

In urban areas food prices should be studied carefully and these should be compared with the cash income of the family and the possibilities of food growing and livestock keeping.

C It is advisable to build the houses at the N.R.U. of the same type and style as those locally used, with possible improvements made by the occupants themselves with materials which are locally available and cheap enough for the people themselves to buy.

In the way of improvements, fireplaces made of clay can be introduced, instead of using the open fires or charcoal burners, which are so dangerous with children and wasteful of fuel. Furnishings also should be of the local type, and at prices which can be afforded.

D Water supply can be a great problem, but an example can be set by using borehole water or by building the N.R.U. near other available sources such as a river or dam. Too often villages are built a great distance from water sources, wasting much of the mother's valuable time by having to fetch the family needs daily, even though she may meet her friends and have a friendly chat.

In cities mothers can be taught not to waste piped water unnecessarily.

E At the N.R.U. only locally available foods should be used. Sometimes one is offered gifts of food, even from abroad, which it is tempting to accept, but, if the buying of these foods is not within the reach of the mother's budget, they should not be accepted.

Improvements on local foods can be taught by growing more nourishing vegetables with better methods and also by keeping livestock. Food storage should be taken into consideration as so much food is wasted by bad storage and inadequate preservation.

F It is important to know the local standards of education, if illiteracy is general, booklets and leaflets are of little use.

It is the constant application of what is being taught which will make the mothers remember and help them bring it into practice, providing the teaching is geared entirely to their home conditions.

The routine set up at an NRU should fit in with the local pattern of family living. E.g. if the mother works on the land in the morning hours, these hours should be used for gardening at the centre.

G Local contacts with authorities and services are essential. Mothers and their children can be admitted through hospitals and health centres, and a close cooperation with the staff if important.

Should a hospital or health centre plan to operate NRU itself, care must be taken to build it some distance away from the hospital atmosphere to make parents realise that the health of their children can be achieved by the right way of feeding and living, rather than by attending hospitals and taking medicines.

At a N.R.U. no medicine should be given to the children at all. At Makeni we found that diarrhoea contracted before admission usually cleared up with proper feeding and hygiene, without any medicine being given.

Colds should be guarded against by proper protection, e.g. adequate covering after sundown and early mornings, and keeping dry during the wet season.

Fathers should be invited and welcomed as much as possible at the centre, partaking in discussions and being asked for their opinions.

A health centre may successfully operate a N.R.U. adjacent to its own buildings, as these are usually very rural and do not resemble the hospital atmosphere of sickness and distress.

If the staff is involved in the running of such a centre, the emphasis can become involved much more on health and health teaching rather than merely dressing wounds and handing out medicine.

If there is an active Community Development Department, a close liaison may be very helpful, especially with housing improvements, adequate water supplies, better food growing, preservation and storing. It may be useful to invite the local community development officer to assist with the practical teaching at the N.R.U.

The Social Welfare Department may be needed to help destitute families. Often malnutrition finds its origin in social maladjustment, unemployment, widowhood and divorced or deserted mothers. The Department may be able to assist in adjusting or improving home conditions.

A N.R.U. should never be a convalescent wing of a children's ward. Only those mothers whose children show signs of being affected by malnutrition should be admitted with their children. Otherwise the issue may become confused; not curing, but preventing illness should be the aim.

Appendix II

Staff Requirements at a Nutrition Rehabilitation Unit

The number of staff depends to some extent on the size of the centre. In general, it is advisable that at least one staff member is living at the centre.

At Makeni we found that two housemothers were able to look after six mothers and twelve children, doing the food budgeting and home craft teaching together with the practical work such as cooking, cleaning, gardening and feeding which, under their supervision was done by the mothers themselves. The mothers and their children stayed for a period of three weeks. The first week was taken up by settling down and getting used to regular feeding and sleeping hours.

The highest weight gains were usually recorded during the second week, when appetites had increased and the children had begun to play. During the first 10-14 days, cooking and eating was done collectively in the communal kitchen - lecture room, but during the last week, each mother cooked for and fed the children on the veranda of her own house, which was allocated to her for the duration of her stay at the centre.

One of the housemothers is responsible for food, including the buying, picking, measuring and issuing of daily requirements to the mothers, supervising the cooking, watering the gardens and feeding the chickens.

The other housemother is responsible for the care, feeding and health of the children, the supervision of bathing, cleaning, laundering and doing home craft teaching.

Duty hours were arranged as follows: -

Both on duty from 06.30 to 12.30.

One off duty from 12.30 to 17.30 and on from 17.30 to 21.30.

The other off duty at 17.30.

Each has one day off per week, either Saturday or Sunday.

During the last week of the month, duties were as follows: -

two days for cleaning, stocktaking, replenishing and administration

two days home visiting

three days off duty

Although the working hours are long, the duties are not strenuous. Once the families are settled down to the day's routine, practically all the work is done by the mothers themselves. I would like to emphasize that a happy atmosphere is essential for a successful outcome at the centre. All the procedures of housework, laundry, gardening, cooking, feeding and sleeping hours are discussed with the mothers and disagreements taken into consideration. One cheerful and bright mother in a group can make all the difference to the morale of the group.

Qualifications of the Housemothers

Both our housemothers had primary school education and a 2 year homecraft training course. It is important that, whatever the training, they should have a good working knowledge of cooking and food values, gardening, livestock keeping, sewing and mending.

Part-time Staff at Makeni

A social worker spends two day each week assessing the home and social conditions of the families to be admitted. This often includes a visit to the husband at work. Also follow-up visits one month after the family has left the centre and subsequent 6 monthly visits, if possible, are done with the cooperation of the health visitor. All home visit results are recorded in the family file kept at the centre.

The medical assistant from the nearby health centre gives health talks two evenings a week, and as he lives nearby, he is also available in case of sickness or other emergencies.

The overall supervision and planning at present is done by a state registered nurse on a part-time voluntary basis.

I would like to point out that conditions and problems in Lusaka are such that a qualified social worker is of great help. The problems are often varied and complex and the distances to cover in the outlying districts are quite considerable. The two housemothers made home visits to understand the home conditions and the background of the families to be admitted. In rural areas it is perhaps not so important to have a social worker; as the village community will be able to help. In fact, N.R.U.s have been run quite successfully at rural health centres by medical assistants and their helpers, providing that at least one staff member is sufficiently trained in nutrition values and cooking.

Appendix III

Specified Feeding Programme, Including Budgeting

Having studied the local food supplies and feeding habits, it is important to work out the various food values first. There are several publications from which to obtain information about the various foods and their value in calories, proteins, carbohydrates and vitamins and minerals. At Makeni we used "Zambian Foodstuffs" compiled by the late Mrs. Florence Mazala and published by the National Food and Nutrition Commission. This booklet covers a wide range of foods available in most African countries and other parts of the tropical world.

From the beginning, we set out a certain budget which was based on the wage income of the lower income groups such as unskilled labourers, agricultural workers, and house servants. It is recommended that about one third of the income of a person in this group is spent on food, although with very low incomes, a greater proportion must be spent on food to reach a minimum nutritional standard.

The daily requirement for children of normal weight is as follows:

Age	Calories	Protein
1-3 years	1300	35 grammes
3-5 years	1500	38-40 grammes
Adults	2000	100 grammes

We found that the malnourished and deprived children aged one to three years old could eat no more than 700-800 calories per day with up to 38-40 grammes of protein, and the children aged 3-5 years up to 1000 calories with 40-42 grammes of protein. On these amounts we had excellent weight gains. For the contents of the daily menus of the children see the appropriate section of the main body of this report. Care has to be taken not to introduce too many foods the child has not

eaten before. Use one instead of two proteins for the midday meal. Rice is easier to digest than maize meal. It is also less bulky. As the child gets accustomed to new foods and begins gaining weight, the extra protein and calories can be added to the diet.

The protein content of the fat free milk made the protein intake in our case higher than actually required for growth, but we found that the extra milk drink in the morning kept the children more content. With the present cost of dry skim milk, this could be done within our budget limits.

Weights and Measures

After having worked out the food values and required weight amounts, it was then quite easy to convert weights into measures by pouring the (uncooked) foods into standard cups and bowls such as every family buys at the local stores. Again, this can be adjusted to what is locally used. In this way food has to be weighed only once if the same utensils are always used.

Prices and Measurements

These should be discussed at length so the mothers become completely familiar with the best way of spending their food allowance. If mothers want a special item included on the menu, the cost and food value should be looked into first to find out if she can afford it and if the food value is worth it.

In many places it is the custom to serve staple and relish separately. This is all right with adults and bigger children, but the little ones are often unable to get their share in this way. This, by the way, is a common cause of malnutrition.

Also, before the child has its teeth, it is difficult for it to chew meat, dry fish or beans. It is therefore recommended that these foods are pounded, the meat scraped and, at the stage of weaning, all relish sieved. Leaf vegetables are digested much better if they are pounded before cooking. If vegetables, fish and beans are pounded, they can then be lightly cooked and added to the staple porridge. It is then easier for the weaning child to eat the soft mixture with a spoon. In this way it gets a balanced diet with every spoonful it eats.

At Makeni the children were being fed whilst the mothers' food was cooking on the same fire that had been used for cooking the children's food. This involved very little extra fuel or work. After their midday and evening meal the children were put to bed so that the mothers could have their meal in peace. We did not, however, insist on this procedure, and used it only if mother and child felt happy about it.

Mothers' Food.

This was issued separately so as to get used to individual requirements. A daily issue of approximately 2000 calories and 100 grammes protein looks like this:

	Calories	Proteins (in grammes)
200 gr. maize meal	820	14
100 gr. rice	340	6
30 gr. groundnuts	180	9
50 gr. beans	150	15
100 gr. dried fish	290	54
100 gr. sugar	300	
1 spoon tea leaves		
30 gr. milk powder	105	10
¼ Kg. fruit and veg.	100	4
	2285 calories	110 gr. proteins

The mothers were left entirely free as to how to cook their own food. At weekends there was always something extra in the way of meat, fish or vegetables according to what we could afford on the budget.

We also worked out family budgets on several incomes based on the local food prices; the lowest budget being K10 per month for a family with two young children. This budget allowed for maize meal, beans, groundnuts, dried fish, 2 Kg sugar, ½ Kg salt, and a bottle of cooking oil. Vegetables had to come from the garden or from leaves picked from trees and hedges. The budget did, however, include two bars of soap and one bag of charcoal. Our budget came to an average of K3.90 per head per month.

The detailed budget sheets were explained to the parents and issued to them on their departure.

Appendix IV

Record Keeping

To keep certain records is necessary:

a. to assess progress
b. for information and reference

As the staff is not usually highly trained, record keeping should be kept as easy and explicit as possible with a minimum of writing required. At Makeni we recorded the following: -

Name
Age
Medical
- Weight
- Height
- Head circumference
- Chest "
- Arm "
- Teeth
- Attendance at under fives clinic
- Immunisations

Social and home conditions
- Occupation of the parents
- Family income
- Housing conditions
  - Number of rooms - food storing facilities
  - Water supply - toilet facilities
  - Light, heating and cooking facilities
  - Cleanliness
  - Kitchen garden
  - Number of children dead and alive

Each family has a file which is kept at the centre.

All children are weighed and measured on admission. This is repeated weekly, preferably before breakfast.

Home visits and subsequent follow up visits are recorded on the same file. Any information which may be of value can be added. In these centres the mothers and children are living under conditions very similar to their home environment. Thus, useful observations can be made of their behaviour patterns regarding the physical growth and mental development of the young child.

For these reasons, Nutrition Rehabilitation Units may also be used as reference centres for medical training institutions. The staff at Makeni has always welcomed students both medical and social, and encouraged the interest, finding time to discuss their special interests.

We are grateful to Miss Joan Koppert SRN, SCM and The Child Care and Adoption Society of Zambia for allowing us to publish this report.

Michael Stead VSO, Neil Donnelly and Peter Loewenstein have made valuable comments on the script.

Readers interested in the work of the Child Care and Adoption Society may write to them at P.O. Box RW 245, Lusaka.

THE NATIONAL FOOD AND NUTRITION COMMISSION OF ZAMBIA

Published by The National Food and Nutrition Commission, Box 2669, Lusaka, Zambia

printed by Associated Printers Ltd

362.1989